CLAIMS

What is claimed is:

- 1 Claim 1 is deleted.
- 2 Claim 2 is deleted.
- 3 Claim 3 is deleted.
- 4 Claim 4 is deleted.
- 5 Claim 5 is deleted.
- 6 Claim 6 is deleted.
- 7 Claim 7 is deleted.
- 8 Claim 8 is deleted.
- 9 Claim 9 is deleted.
- 10 Claim 10 is deleted.
- 11 Claim 11 is deleted.
- 12 Claim 12 is deleted.
- 13 Claim 13 is deleted.
- 14 Claim 14 is deleted.
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- 16 Claim 16 is deleted.
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18 Claim 18 is deleted.

- 19 (Currently amended) A method of learning and recognition of images using an ABM learning algorithm, an ABM recognition algorithm, an APN learning algorithm, and an APN recognition algorithm comprising:
 - a) training a fully connected neural net with the ABM learning algorithm;
 - b) classifying images with the ABM recognition algorithm via a stable distribution of an Markov chain;
 - c) extending training of a fully connected neural net with the APN learning algorithm from a plurality of a binary neural nets to multi-valued neural nets; and
 - d) extending the ABM recognition algorithm with APN recognition algorithm from a plurality of a binary neural nets to multi-valued neural nets wherein extending further comprises:
 - b1) computing a matching score based on the ABM recognition algorithm and a distance between two images.

A computer implemented process of claim 1 and 3 (search and classification), wherein the neural-layer deploys the ABM or/and APN algorithm.

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- 25 Claim 25 is deleted.
- 26 Claim 26 is deleted.
- 27 Claim 27 is deleted.
- 28 Claim 28 is deleted.